

What is claimed is:

1. A method of preventing migration of a cell by increasing intracellular cyclin-dependent kinase inhibitor p27 activity.
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2. The method of claim 1, wherein the cell is a smooth muscle cell or a tumor cell.
- 10 3. A method of treating a subject's cardiovascular disease, which comprises administering to the subject a compound which increases intracellular cyclin-dependent kinase inhibitor p27 activity, thereby alleviating the subject's cardiovascular
15 disease.
4. The method of claim 3, wherein the cardiovascular disease is atherosclerosis, arteriopathy after heart transplantation, or restenosis after angioplasty or coronary stent
20 placement.
5. A method of inhibiting tumor metastasis in a subject, which comprises administering to the
25 subject a compound which increases intracellular cyclin-dependent kinase inhibitor p27 activity, thereby inhibiting tumor metastasis.
6. The method of claim 1, 3, or 5, wherein cyclin-dependent kinase inhibitor p27 activity is
30 increased by increasing C3 exoenzyme activity.

7. A method of identifying a chemical compound that inhibits cellular migration, which comprises contacting cells whose migration is inhibited when intracellular cyclin-dependent kinase inhibitor p27 activity is increased, or contacting an extract from said cells, with the chemical compound under conditions suitable for increasing p27 activity, and detecting an increase in p27 activity in the presence of the chemical compound so as to thereby identify the chemical compound as a compound which inhibits cellular migration.
8. The method of claim 7, wherein the chemical compound is not previously known to inhibit cellular migration.
9. A method of screening a plurality of chemical compounds not known to inhibit cellular migration to identify a chemical compound which inhibits cellular migration, which comprises:
- (a) contacting cells whose migration is inhibited when intracellular cyclin-dependent kinase inhibitor p27 activity is increased, or contacting an extract from said cells, with the plurality of chemical compounds under conditions suitable for increasing p27 activity;
- (b) determining if p27 activity is increased in the presence of the plurality of chemical compounds; and if so

(c) separately determining if p27 activity is increased in the presence of each compound included in the plurality of chemical compounds, so as to thereby identify any compound included therein as a compound which inhibits cellular migration.

10. The method of claim 7 or 9, wherein the cells are smooth muscle cells or tumor cells.

11. The method of claim 7 or 9, wherein the cells are vertebrate cells.

12. The method of claim 11, wherein the vertebrate cells are mammalian cells.

13. The method of claim 12, wherein the mammalian cells are human cells.

14. A chemical compound identified by the method of claim 7 or 9.

15. A pharmaceutical composition comprising (a) an amount of a chemical compound identified using the method of claim 7 or 9, or a novel structural and functional homolog or analog thereof, capable of passing through a cell membrane and effective to increase intracellular cyclin-dependent kinase inhibitor p27 activity and (b) a pharmaceutically acceptable carrier capable of passing through the cell membrane.

16. A pharmaceutical composition comprising an amount of a chemical compound identified using the method of claim 7 or 9 effective to inhibit cellular migration and a pharmaceutically acceptable carrier.
17. A method for preparing a composition which comprises admixing a carrier and a pharmaceutically effective amount of a chemical compound identified by the method of claim 7 or 9 or a novel structural and functional analog or homolog thereof.
18. A method for making a composition of matter which inhibits cellular migration which comprises identifying a chemical compound using the method of claim 7 or 9, and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.
19. A method of treating a subject with a cardiovascular disease which comprises administering to the subject a therapeutically effective amount of a chemical compound identified by the method of claim 7 or 9, or a novel structural and functional analog or homolog thereof.
20. The method of claim 19, wherein the cardiovascular disease is atherosclerosis, arteriopathy after heart transplantation, or

restenosis after angioplasty or coronary stent placement.

- 5 21. A method of inhibiting tumor metastasis in a subject which comprises administering to the subject a therapeutically effective amount of a chemical compound identified by the method of claim 7 or 9, or a novel structural and functional analog or homolog thereof.
- 10 22. Use of a chemical compound identified by the method of claim 7 or 9 for the preparation of a pharmaceutical composition for treating an abnormality, wherein the abnormality is
- 15 23. The use of claim 22, wherein the abnormality is a cardiovascular disease or a tumor metastasis.
- 20 24. The use of claim 23, wherein the cardiovascular disease is atherosclerosis, arteriopathy after heart transplantation, or restenosis after angioplasty or coronary stent placement.

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